

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An integrated controlled multi-air conditioner system, comprising:

a plurality of groups of indoor air conditioning units;

a plurality of outdoor air conditioning units, each of said plurality of outdoor air conditioning units connected with ~~said indoor unit groups, respectively~~ one of said plurality of groups of indoor air conditioning units;

at least one local ~~control means~~ controller connected in common with said plurality of outdoor air conditioning units over an internal network ~~for controlling~~ and configured to control operations of said plurality of outdoor air conditioning units; and

a protocol conversion ~~means~~ device connected with said local ~~controller~~ control means, said protocol conversion device configured to convert ~~means~~ converting different communication protocols of data transmitted and received between an external Internet network and said internal network into each other to transfer a control command received over said external Internet network to at least one of said plurality of outdoor air conditioning units.

2. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 1, further comprising:

an integrated control means for transferring controller configured to transfer a control command to said plurality of outdoor air conditioning units via said protocol conversion ~~means~~ device to control said plurality of outdoor air conditioning units in an integrated manner.

3. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 2, wherein said integrated ~~control means~~controller is assigned a public Internet protocol (IP) address and a private IP address so that said integrated controller ~~it~~ is accessible from said external Internet network and internal network, respectively.

4. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 3, wherein said protocol conversion ~~means device~~ is assigned a public IP address and a private IP address so that said integrated controller ~~it~~ is accessible from said external Internet network and internal network, respectively.

5. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 2, further comprising:

an IP translation/sharing means device assigned a public IP address contained in a control command received from said external Internet network so that ~~it~~ said IP translation/sharing device is controllable from said external Internet network, said IP translation/sharing ~~means translating device configured to translate said public IP address contained in a control command received from said external Internet network~~ into a private IP address and ~~transferring to transfer~~ the received control command to said integrated ~~control means~~controller or said protocol conversion means device ~~based on the basis of~~ the translated private IP address.

6. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 5, wherein said IP translation/sharing ~~means device~~ is adapted to store a table

including private IP addresses and port numbers assigned respectively to ~~a~~ a plurality of devices connected to said internal network.

7. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 2, further comprising:

a hub ~~for concentrating~~ configured to concentrate transfer lines of ~~a~~ a plurality of devices connected to said internal network ~~at a center of said internal network and relaying to relay~~ transmission and reception of data between said transfer lines and said external Internet network.

8. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 2, wherein said integrated ~~control means~~ controller includes:

a timer ~~for establishing~~ configured to establish synchronization of a control system of said integrated ~~control means~~ controller;

a key input unit configured to input ~~for inputting~~ control commands ~~for to~~ control of the operations of said plurality of outdoor air conditioning units;

a display unit configured to display ~~for displaying~~ the control commands ~~inputted through~~ said key input unit and the associated outdoor unit/indoor air conditioning unit control states;

a central processing unit configured to control ~~for controlling~~ signal input and output of said key input unit and display unit and to control transmission and reception of data over said internal network; and

a wired interface ~~for transmitting and receiving~~configured to transmit and receive data between said central processing unit and said protocol conversion ~~means~~device according to an Ethernet protocol.

9. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 8, wherein said integrated ~~control means~~controller further includes a wireless interface ~~for transmitting and receiving~~configured to transmit and receive data in a wireless manner based on a wireless Ethernet protocol.

10. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 2, wherein said protocol conversion ~~means~~device includes:

an Internet interface ~~for transmitting and receiving~~configured to transmit and receive data to/from said external Internet network according to an Ethernet protocol;

a serial communication interface ~~for transmitting and receiving~~configured to transmit and receive data to/from said at least one local ~~control means~~controller according to a serial communication protocol; and

a communication ~~control means for controlling~~controller configured to control transmission and reception of data between said Internet interface and said serial communication interface.

11. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 10, wherein said communication ~~control means~~controller includes:

an address storage unit ~~for storing~~configured to store a private IP address and port number assigned to said at least one local control means~~controller~~; and

a protocol converter ~~for converting~~configured to convert different communication protocols of data transmitted and received between said Internet interface and said serial communication interface into each other.

12. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 11, wherein said communication ~~control means~~controller further includes a graphic user interface (GUI) storage unit ~~for storing~~configured to store a GUI-based air conditioner control program for enabling a user to remotely control said at least one local control means~~controller~~ or said plurality of outdoor air conditioning units using an Internet terminal accessible to said external Internet network.

13. (Original) The integrated controlled multi-air conditioner system as set forth in claim 12, wherein said GUI storage unit is adapted to send said air conditioner control program over said external Internet network in response to a request from said Internet terminal.

14. (Currently Amended) An integrated controlled multi-air conditioner system, comprising:

a plurality of groups of indoor air conditioning units;

a plurality of outdoor air conditioning units, each of said plurality of outdoor air conditioning units connected with ~~said indoor unit groups~~ one of said plurality of groups of indoor air conditioning units, respectively;

a plurality of local ~~control means~~ controllers connected with said outdoor air conditioning units over an internal network ~~for controlling~~, each of said plurality of local controllers configured to control operations of a corresponding one of said outdoor air conditioning units; ~~respectively~~; and

a plurality of protocol conversion ~~means~~ devices networked with said plurality of local ~~control means~~ controller, respectively, each of said plurality of protocol conversion ~~means~~ converting devices configured to convert different communication protocols of data transmitted and received between an external Internet network and said internal network into each other to transfer a control command received over said external Internet network to a corresponding one of said outdoor air conditioning units.

15. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 14, further comprising:

an integrated control means for transferring controller configured to transfer a control command to said outdoor air conditioning units via at least one of said plurality of protocol conversion ~~means~~ devices to control said outdoor air conditioning units in an integrated manner.

16. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 15, wherein said integrated ~~control means~~ controller is assigned a public Internet

protocol (IP) address and a private IP address so that said integrated controller ~~it~~ is accessible from said external Internet network and internal network, respectively.

17. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 15, wherein each of said plurality of protocol conversion ~~means is devices~~ is assigned a public IP address and a private IP address so that said integrated controller ~~it~~ is accessible from said external Internet network and internal network, respectively.

18. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 15, further comprising:

an IP translation/sharing ~~means device~~ assigned a public IP address so that ~~it~~ said IP translation/sharing device is controllable from said external Internet network, said IP translation/sharing device configured to translate ~~means translating~~ said public IP address contained in a control command received from said external Internet network into a private IP address and ~~transferring to transfer~~ the received control command to said integrated ~~control~~ means controller or to one of said plurality of protocol conversion ~~means devices~~ based on the ~~basis of~~ the translated private IP address.

19. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 18, wherein said IP translation/sharing ~~means device~~ is adapted to store a table including private IP addresses and port numbers assigned respectively to ~~a~~ a plurality of devices connected to said internal network.

20. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 15, further comprising:

a hub ~~for concentrating~~ configured to concentrate transfer lines of ~~all~~ a plurality of devices connected to said internal network at a center of said internal network and ~~relaying to relay~~ transmission and reception of data between said transfer lines and said external Internet network.

21. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 15, wherein said integrated ~~control means~~ controller includes:

a timer ~~for establishing~~ configured to establish synchronization of a control system of said integrated ~~control means~~ controller;

a key input unit ~~for inputting~~ configured to input control commands ~~for to control of the~~ operations of said outdoor air conditioning units;

a display unit ~~for displaying~~ configured to display the control commands ~~inputted through~~ said key input unit and the associated outdoor unit/indoor air conditioning unit control states;

a central processing unit ~~for controlling~~ configured to control signal input and output of said key input unit and display unit and transmission and reception of data over said internal network; and

a wired interface ~~for transmitting and receiving~~ configured to transmit and receive data between said central processing unit and at least one of said plurality of protocol conversion ~~means devices~~ according to an Ethernet protocol.

22. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 21, wherein said integrated ~~control means~~controller further includes:

a wireless interface ~~for transmitting and receiving~~configured to transmit and receive data in a wireless manner based on a wireless Ethernet protocol.

23. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 15, wherein each of said plurality of protocol conversion ~~means~~devices includes:

an Internet interface ~~for transmitting and receiving~~configured to transmit and receive data to/from said external Internet network according to an Ethernet protocol;

a serial communication interface ~~for transmitting and receiving~~configured to transmit and receive data to/from at least one of said plurality of local ~~control means~~controllers according to a serial communication protocol; and

a communication ~~control means for controlling~~ controller configured to control transmission and reception of data between said Internet interface and said serial communication interface.

24. (Currently Amended) The integrated controlled multi-air conditioner system as set, forth in claim 23, wherein said communication ~~control means~~controller includes:

an address storage unit ~~for storing~~configured to store a private IP address and port number assigned to said plurality of local ~~control means~~controllers; and

a protocol converter ~~for converting~~configured to convert different communication protocols of data transmitted and received between said Internet interface and said serial communication interface into each other.

25. (Currently Amended) The integrated controlled multi-air conditioner system as set forth in claim 24, wherein said communication ~~control means~~controller further includes:

a graphic user interface (GUI) storage unit ~~for storing~~configured to store a GUI-based air conditioner control program for enabling a user to remotely control said plurality of local ~~control means~~controllers or said plurality of outdoor air conditioning units using an Internet terminal accessible to said external Internet network.

26. (Original) The integrated controlled multi-air conditioner system as set forth in claim 25, wherein said GUI storage unit is adapted to send said air conditioner control program over said external Internet network in response to a request from said Internet terminal.